

such an insect with its mouth parts dusted with pollen visits another flower, these organs strike the stigma first, and thus the process of cross-pollination is completed.

It is possible that self-pollination may occur by the falling of the pollen upon the glutinous stigma, especially when the flowers are shaken by the high winds of the mountain top.

The base of the corolla is conspicuously thickened and very succulent (FIG. 1, A) suggesting that it too may secrete nectar.

Bumblebees belonging to three species were the only visitors and they are all species common in northern New England at low elevations and not, as had been hoped, Arctic forms. They were observed, however, to work under conditions of high wind and dense fog which would have ordinarily stopped visits. The concealed position of the flowers beneath the leaves made them difficult to approach by flying insects, bumblebees often falling on the ground and being obliged to crawl up to the flowers. When they reached a flower, they seized it roughly with their anterior legs, thrust in their tongue and pivoted around the flower upside down. Many of the flowers had their tips chewed off by the bumblebees, a mutilation which probably did not seriously interfere with pollination. The exceptionally abundant nectar proved ample attraction, and the flowers were visited repeatedly, especially by *Bombus terricola*.

The following insects were collected on Mt. Katahdin, Maine, at altitudes of 4200 to 4600 feet from July 14 to 16, 1937, and on July 27, 1941, all sucking nectar.

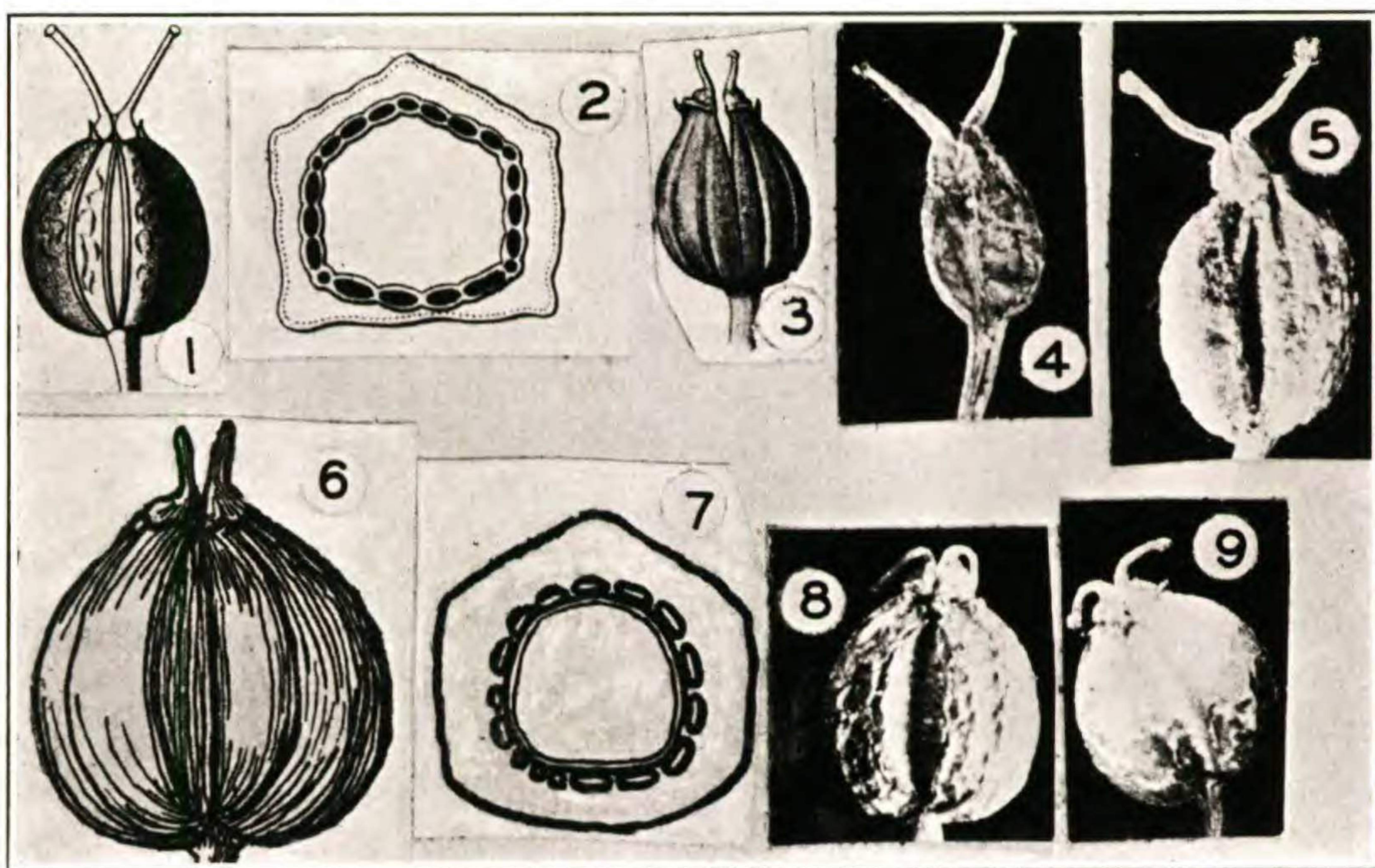
HYMENOPTERA. Apoidea. *Bombus terricola* Kirby 9 ♀; *B. vagans* Sm. 1 ♀; *B. ternarius* Say 3 ♀.

LOUISVILLE, KENTUCKY.

BERULA pusilla (Nutt.), comb. nov. *Sium pusillum* Nutt. in Torr. & Gray, Fl. N. Am. i. 611 (1840). *S. ? incisum* Torrey in Fremont, Rep. Expl. Rocky Mts. 90 (1845). *S. angustifolium* sensu Am. auth., not L. *B. angustifolia* sensu Am. auth., not Mert. & Koch. *B. erecta* sensu Coville in Contrib. U. S. Nat. Herb. iv. 115 (1893), not *Sium erectum* Hudson, basynym. *S. Novae-Mexicae* Koso-Poljansky in Bull. Soc. Nat. Moscou, n. s. xxvii. 173 (1915).

The North American plant has generally been treated as specifically identical with the Eurasian *Berula erecta* (Huds.)

Coville (*Sium erectum* Huds., *S. angustifolium* L., *B. angustifolia* (L.) Mert. & Koch). Our plant, however, has the calyx-lobes obsolete, the Eurasian plant with them evident; the styles very short and generally recurved, in the Eurasian plant prolonged and ascending; and the mericarps scarcely angled, in the Eurasian 5-angled. As pointed out by H. Wolff in Engler, *Pflanzenr.* iv²²⁸. 339 (1927), the leaflets of the American plant average smaller and more incised, and the umbels smaller than in the Eurasian specimens. The differences in fruit and development of calyx-lobes and styles are shown in FIGS. 1-9, FIGS. 1-5 of



Eurasian *B. erecta*, FIGS. 6-9 of *B. pusilla*. FIGS. 1 and 2 are after Reichenbach, *Ic. Fl. Germ.* xxi. t. mdccclxxviii. figs. 7 and 9; FIG. 3 after Hegi, *Ill. Fl. Mittel-Eur.* v², t. 198, fig. 3b (1926); FIG. 4, young fruit, $\times 10$, from *Seringe*, *Herb. Helv.*, no. 2384; FIG. 5, fruit, $\times 10$, from Genève, *Reuter*. Of FIGS. 6-9, showing fruits of *B. pusilla*, FIGS. 6 and 7 are after Koso-Poljansky; FIG. 8, mature fruit, $\times 10$, from Guadalupe Mts., Texas, *Havard*, no. 237; FIG. 9, $\times 10$, from Los Angeles, California, July, 1879, *Nevin*.

The many contrasts, including the more lacerate and smaller leaflets of *B. pusilla*, are well brought out by Koso-Poljansky; unfortunately, he did not know of the two earlier and quite

available specific names and conferred a very unusual new one. I am indebted to Dr. Wittrock for the loan of Nuttall's type of *Sium pusillum*, preserved at the New York Botanical Garden.—

M. L. FERNALD.

TWO FERNS NEW TO VIRGINIA

CARROLL E. WOOD, JR.

IN 1915 Fernald gave the range of *Botrychium lanceolatum* (Gmel.) Ångstroem var. *angustisegmentum* Pease & Moore as extending from the St. John Valley, New Brunswick, to eastern and southern Ontario, Ohio, Pennsylvania, and New Jersey, with the greatest development of the plant from Maine to central New York.¹ More recently, Wherry reported the plant as ranging south to Essex County, N. J., Chester and Lancaster Counties, Pa., and Randolph County, West Virginia.² Brooks included in his *Pteridophytes of West Virginia* both the Randolph County locality where a single specimen was found on Cheat Mountain (alt. 4000') by Mr. Russell West and an additional station discovered by Dr. P. D. Strausbaugh near Green Bank in Pocahontas County.³ Apparently these last two occurrences are the most southerly heretofore recorded, the fern presumably never having been found before in Virginia.

The discovery of a colony at an altitude of approximately 3800' near Mountain Lake, Giles County, Virginia, is of interest, therefore, both as a range extension southwest along the Alleghenies (about 75 miles) and as an addition to the flora of Virginia. On August 11, 1941, ten plants were found growing in humus-rich shaly soil (pH 5.9 as determined by the glass electrode method) in cool maple-birch woods in the ravine of Doe Creek about ½ mile southwest of Mountain Lake Post Office. Although individual plants exhibited considerable variation in size (7–17 cm.) all were in fruiting condition. The plants all agree closely with more northern specimens and with the Pocahontas County specimen which Dr. Earl L. Core very kindly sent for comparison from the Herbarium of the University

¹ Fernald, *RHODORA* 17: 87 (1915)

² Wherry, *Guide to Eastern Ferns*, p. 25 (1937)

³ Brooks and Margolin, *Pteridophytes of West Virginia*, p. 11 (1938)